

## **General Disclaimer**

### **One or more of the Following Statements may affect this Document**

- This document has been reproduced from the best copy furnished by the organizational source. It is being released in the interest of making available as much information as possible.
- This document may contain data, which exceeds the sheet parameters. It was furnished in this condition by the organizational source and is the best copy available.
- This document may contain tone-on-tone or color graphs, charts and/or pictures, which have been reproduced in black and white.
- This document is paginated as submitted by the original source.
- Portions of this document are not fully legible due to the historical nature of some of the material. However, it is the best reproduction available from the original submission.

# NASA TECHNICAL MEMORANDUM

(NASA-TM-78302) SCATS: SRB COST ACCOUNTING  
AND TRACKING SYSTEM HANDBOOK (NASA) 62 p  
HC A02/MF A01 CSCL 05A

N79-27002

Unclas

G3/81 27851

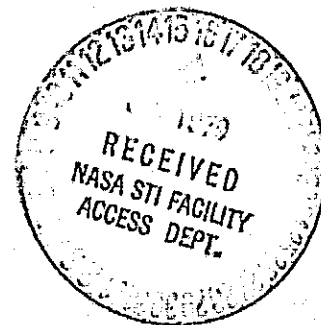
## SCATS - SRB COST ACCOUNTING AND TRACKING SYSTEM HANDBOOK

By Ross B. Zorn, Rodney D. Stewart, Gary Coley,  
and Marie Higginbotham

Systems Analysis and Integration Laboratory  
and Computer Services Office

June 1978

NASA



*George C. Marshall Space Flight Center  
Marshall Space Flight Center, Alabama*

## FOREWORD

This system creates a management report reflecting "Weekly Shuttle Changes" and updates a master file data base. In addition, a special report can be produced from the master file data base for a specified time period.

The Weekly Shuttle Changes report is produced from transactions supplied by the system user. This process contains three functions. The first function performs a sort on Level, PCIN, and ECP/ECR. The second function is an edit process that searches for specific criteria in each transaction. The third function uses accepted transactions (see Appendix D, Figure D-2) to insert, modify, or delete records from the cumulative master file data base.

The special report program provides the capability of producing a selective data base listing (see Appendix C, Figure C-4). This function is accomplished through the use of parameter cards (see Appendix D, Figure D-3) permitting the selection range of a given time period.

# TABLE OF CONTENTS

	Page
INTRODUCTION AND BACKGROUND .....	1
CHANGE ESTIMATING PROCEDURE FOR SCATS SYSTEM.....	2
DESCRIPTION OF SCATS PROGRAM .....	4
Basic Operations .....	4
General Information for Processing Input	
Transaction Types .....	9
Input Preparation for Weekly Edit/Update Run .....	10
Editing of Transaction Input Data .....	12
Special Request Report Parameter Card	
Format/Instructions .....	13
Future Enhancements .....	13
APPENDIX A — ERROR MESSAGES .....	15
APPENDIX B — WORK SHEETS .....	19
APPENDIX C — REPORTS .....	27
APPENDIX D — RECORD FORMATS.....	33

## LIST OF ILLUSTRATIONS

Figure	Title	Page
1.	SCATS edit/update program run stream . . . . .	2
2.	Flow chart of SCATS weekly edit/update . . . . .	5
3.	Flow chart of SCATS special request program . . . . .	7
4.	Requested report types . . . . .	8
5.	SCATS special request program run stream . . . . .	14

## SCATS - SRB COST ACCOUNTING AND TRACKING SYSTEM HANDBOOK

### INTRODUCTION AND BACKGROUND

As part of the assessment of Space Shuttle Solid Rocket Booster (SRB) changes, it is the practice of the Systems Analysis and Integration Laboratory of Marshall Space Flight Center (MSFC) to produce independent government estimates of Level II, III, and IV changes. These government estimates are used for the following purposes:

- 1) As an input to change boards.
- 2) To support negotiations.
- 3) To provide management with periodic reports that show the type, level, and cost magnitude of changes; and the weekly and semiannual flow of changes.

In mid-1977, it was recognized that the volume of Shuttle SRB Level II, III, and IV changes were going to be substantial, and that an automatic data processing system would be needed to provide weekly and semiannual cost summations and listing of changes. It was also envisioned that, eventually, graphic plots of numbers, types, and costs of changes would be needed to provide management with trend information from which to project anticipated change budgeting and change workload.

Basic features of the SRB Cost Accounting and Tracking System (SCATS) are:

- 1) A simplified run deck (Fig. 1).
- 2) Output reports of weekly changes and error listings (see Appendix C, Figs. C-2 and C-3).
- 3) A detailed "edit" procedure designed to identify and reduce, or eliminate input errors.

The SCATS system in the Marshall Information Retrieval and Display System (MIRADS) format is efficient from the standpoint of computer utilization (approximately 3 minutes of process time per run). A report processed on prime shift requires approximately 20 minutes elapsed time.

```
@RUN          3006AA,1HEL02D3006L,SCATSXBIN201,10,100
@ASG,T        INSCAT,F/1/POS/2
@ASG,TE       TXIN,30/////BCD,REEL NUMBER
@SYS$MSFC$.COPYMK TXIN.,INSCAT.
@ASG,T        SCATSTP,U9S,REEL NUMBER
@XQT          MIR*ADS.ASGFILS
STANDARD
@COPY,G       SCATSTP.,DIC.
@COPY,G       SCATSTP.,SAV.
@ADD          SAV.BUILDANDSAVE
@FIN
```

Figure 1. SCATS edit/update program run stream.

The SCATS system is written in American Standard Code for Information Interchange (ASCII) COBOL programming language for execution on a UNIVAC 1108 computer under the EXEC 8 Operating System. The minimum hardware configuration required for processing the SCATS system is one central processor, one card reader, two tape drives, disk mass-storage unit, and an on-line printer.

This handbook has been prepared to facilitate those not familiar with the SCATS system or with detailed automatic data processing techniques. Therefore, an attempt has been made to explain and be specific in all areas where actions are required to implement and activate the system.

## CHANGE ESTIMATING PROCEDURE FOR SCATS SYSTEM

The Cost Analysis Office requested and is receiving copies of Change Control Board Directives (CCBD's), Engineering Change Requests (ECR's), Engineering Change Proposals (ECP's), and SRB Change Evaluations (see Appendix B, Fig. B-2 through B-5) for subsystems and projects within the Space Shuttle SRB project. The following types of changes are reviewed for cost impact and/or estimates:

1) Level II Changes — These are changes affecting more than one major Space Shuttle element (i.e., Shuttle Orbiter and SRB).

2) Level III Changes — These are changes affecting more than one SRB subsystem (i.e., Recovery System and Solid Rocket Motor).

3) Level IV Changes — These are changes made within an SRB subsystem that do not affect other SRB systems (i.e., change in tube-bend radii in TVC subsystem).

The methodology employed in developing government cost estimates for changes is the "ROUND-TABLE" or "DIRECT" estimating methodology. When it has been decided that the change has no cost impact or has a cost, the description of the change, its identifying numbers, and the estimated cost is entered on a "Key-To-Disk" Transaction Input Form (see Appendix B, Fig. B-1).

Information contained in Appendix B on MSFC Forms 2312 and 2327 addresses Engineering Changes that are required to be made on the SRB and the External Tank (ET). Only the cost of changes made to the SRB are presently being tracked on the SCAT system.

Form 2312, entitled Marshall Space Flight Center Control Board Directive, is issued for approving or disapproving the ECR. This CCBD assigns actions relative to change implementation. Information extracted from this form for use in the SCAT system is as follows:

- 1) Level of engineering change.
- 2) Program Change Identification Number (PCIN).
- 3) Title of engineering change.
- 4) Effectivity (used in estimating only).

Form 2327, entitled MSFC Engineering Change Request, is issued to describe the proposed Engineering Change. This change could affect hardware and documentation or documentation only. The ECR precedes the CCBD and is used in the review and evaluation of contractor-submitted Rough Order of Magnitude (ROM) Cost Proposal and/or in preparing a detailed Government Cost Estimate.



Form 516, entitled Solid Rocket Booster Project Change Evaluation, is submitted by each of the Engineering Change Evaluators and lists impacts and/or recommendations to the proposed change.

Form 2348, entitled MSFC Engineering Change Proposal, is issued to describe MSFC contractor's proposed Engineering Change. This change could affect hardware and documentation or documentation only. The ECP also precedes the MSFC-prepared CCB and is used in the review and evaluation of contractor-submitted ROM Cost Proposal and/or in preparing a detailed Government Cost Estimate.

The estimated cost of Level II, III, and IV SRB Engineering Changes does not include MSFC man-hour cost. The estimated cost does, however, include cost of Engineering Changes made to SRB Ground Support Equipment (GSE) and also cost of new GSE that may be incurred as a result of changes made to the SRB flight hardware.

Input sheets for each week are supplied to the Key Punch Facility in Building 4485 by close of business each Tuesday. After processing the SCATS edit/update run on Wednesday, the completed report is picked up from the computer facility prior to 11:00 a.m. each Thursday for inclusion in weekly notes to the Systems Analysis and Integration (SA&I) Laboratory Director. A semiannual report is compiled and made available to the SA&I Laboratory Director and the SRB Chief Engineer.

## DESCRIPTION OF SCATS PROGRAM

### Basic Operations

Figure 2 illustrates the general flow of the SRB Cost Accounting and Tracking System for the edit/update program which includes the necessary inputs to the system, the computer program phase of data manipulation, and the various reports generated by the system in the course of the computer run.

The purpose of the SCATS system is to list, retain, update, and report changes and their estimated costs.

1. Maintains a Data Base of SRB Changes. This data base is updated weekly and includes the following:

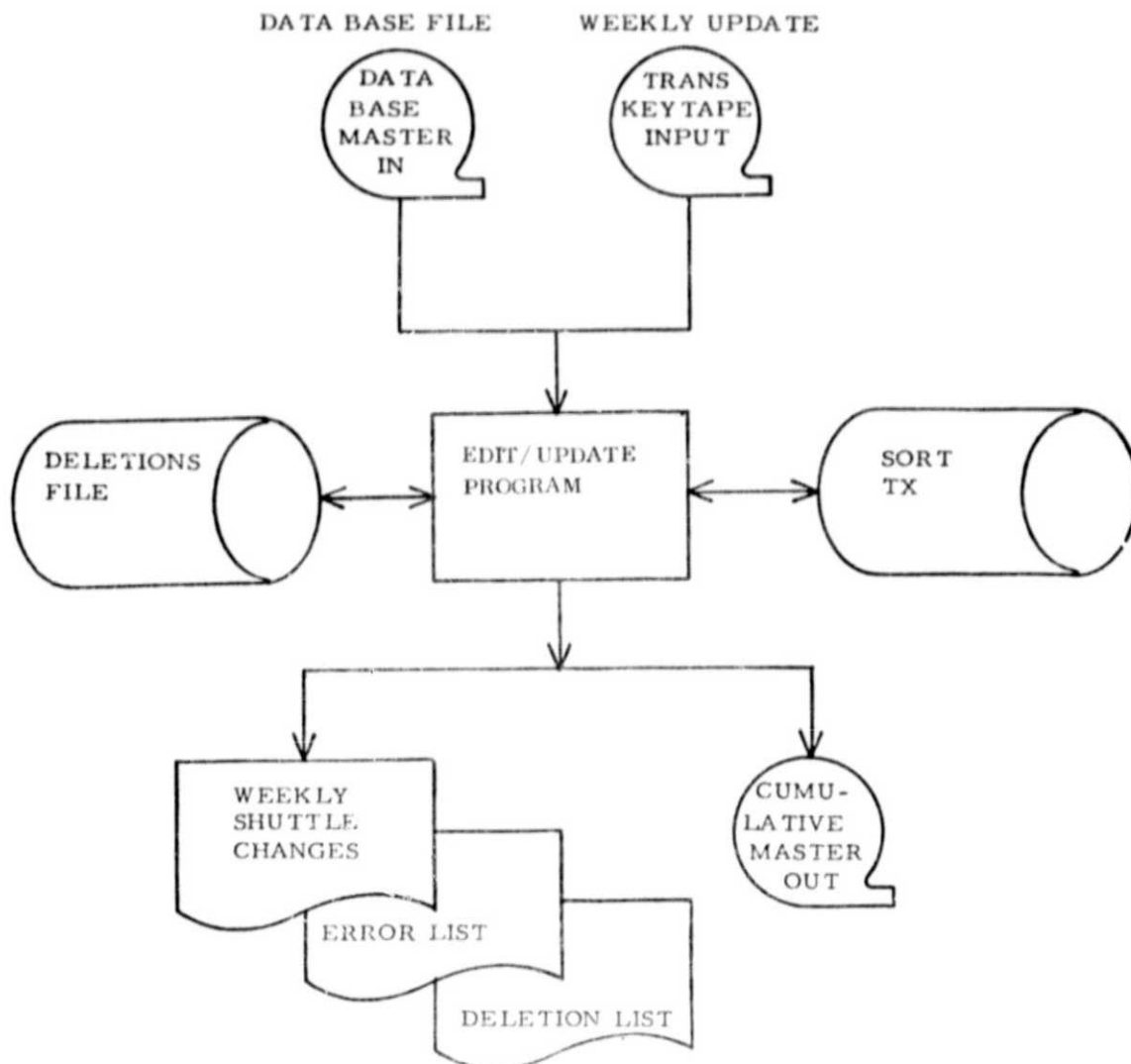


Figure 2. Flow chart of SCATS weekly edit/update.

a) Level of Change: (Levels II, III, or IV)

b) PCIN Number: The PCIN number is assigned by the Configuration Control Board and is a means of controlling and tracking engineering changes.

c) ECR/ECP Numbers: An ECR is normally initiated by in-house organizations. An ECP is normally initiated by a contractor organization. One PCIN may contain multiples of ECR/ECP's.

d) **CCBD Number:** The directive approves or disapproves a change and assigns action relative to change implementation. Usually, a CCBD will approve only one PCIN. (See Appendix B, Figure B-4.)

e) **Description of Change (Title):** This is a narrative description of the change which can be up to 73 characters long.

f) **Government Estimated Cost:** This cost is arrived at by preparing a detailed government cost estimate and/or by a review and evaluation of contractor-submitted ROM Cost Proposal. In those instances where there are more than one ECP/ECR's against the same PCIN, a total cost for that PCIN is listed in the special report printout. This capability is not included in the weekly report because multiple ECP/ECR's under the same PCIN are seldom encountered on a weekly basis.

g) Space is available in the data base for entry of proposed costs, negotiated costs, and the dates of inputs of these costs.

h) The date of the government estimated cost is also included in the data base.

2. **Permits a Data Base Update.** The SRB Cost Accounting and Tracking System is programmed so that a change to the data base may be made any time.

a) A single PCIN ECP number and its associated information can be deleted from the data base if so desired.

b) Modifications can be made to the title, government estimated cost, CCBD number, proposed cost, negotiated cost, and related dates for any change record.

c) The level can be changed by deletion and reentry of a record as can the ECP/ECR numbers.

d) Inserts to the data base can be added at any time, and need not be inserted weekly (but would not show up on weekly report).

3. **Provides Various Types of Reports (Outputs).**

a) Permits weekly additions to data base and simultaneous printout of those entries in a weekly report.

b) Will provide a printout of all ECP/ECR's processed since program was first established (complete data base printout).

c) Provides printout of all changes between a specified start date and a specified end date.

4. Report Process. During the reporting process, the program:

a) Scans the data base.

b) Collects all changes in three categories (Levels II, III, and IV).

c) Adds dollar figures of all ECP's or ECR's within a PCIN to a total PCIN value (applicable to 3.b) and 3.c) above).

d) Adds all PCIN's within a level to give a "Level" total.

e) Adds "Level" totals to provide a grand total.

5. Error Listing. During the weekly input process, an error-listing that includes error messages (see Appendix A) is provided which automatically excludes any PCIN/ECP/ECR numbers which have previously been entered (unless entered as a modification).

Figure 3 illustrates the general flow of the SCATS Requested Reports program run. Figure 4 illustrates each report type.

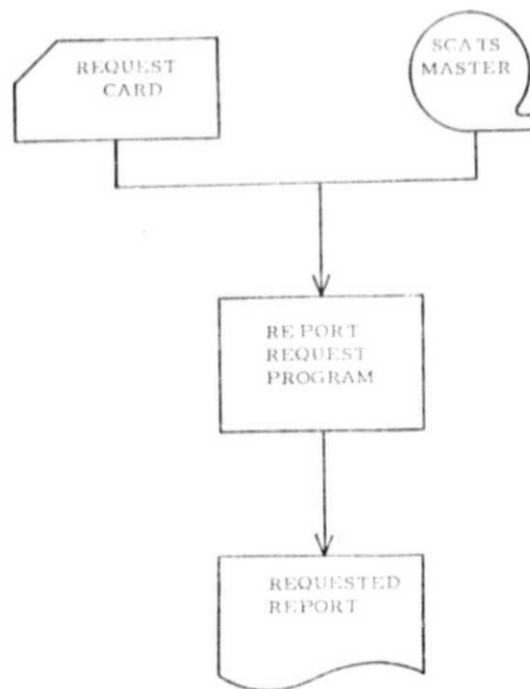


Figure 3. Flow chart of SCATS special request program.

1. Report of Shuttle Changes, entire data base.
2. Report of Shuttle Changes, starting YYMMDD by Government Estimated Date.
3. Report of Shuttle Changes, Starting YYMMDD by Batch Date.
4. Report of Shuttle Changes, through YYMMDD by Government Estimated Date.
5. Report of Shuttle Changes, through YYMMDD by Batch Date.
6. Report of Shuttle Changes, from YYMMDD to YYMMDD by Government Estimated Date.
7. Report of Shuttle Changes, from YYMMDD to YYMMDD by Batch Date.

Note: YYMMDD is a designator of the form of input cards used to extract a report from the data base. (year/month/day, i.e., 780930 is 78 September 30)

Figure 4. Requested report types.

1. Update Program, Input. Pertinent information originating on MSFC Forms 2327 (ECR), 2312 (CCBD), 2348 (ECP), and 516 (SRB Project Change Evaluation) is extracted and entered by the Cost Analysis Office to the Key-to-Disk Transaction Input Form (to be punched) and used as input data for the SCATS run. (An example of these forms is shown in Appendix B, Fig. B-1, B-2, B-3, and B-4.)

2. Update Program, Editing Phase. The editing phase ensures that the inputs conform to the specified requirements of the different types. All transactions with input errors are printed on the Error Report along with a diagnostic message (see Appendix A).

3. Update Program, Update Phase. As the transactions flow through the logic of the system, they are passed against the Master File data base based upon the Activity Code of D (Delete), I (Insert), or M (Modify).

4. Update Program, Report Phase. The data produced by the updating and editing phases comprise the inputs to the report phase. The reports are formatted and printed as (a) Weekly Report of Shuttle Changes and (b) Weekly Report of Shuttle Changes Error Transactions.

5. **Request Program, Input.** Parameter card and the current Master File data base (see Appendix D, Fig. D-3).

## General Information for Processing Input Transaction Types

1. **Insert Transaction Types.** The following are insert transaction types:

a) All input information must pass the edit portion of the program before being sequentially inserted on the Master File data base.

b) New records inserted into the existing data base will have the current "BATCH DATE."

c) Two or more input transactions with the same Level, PCIN, ECP/ECR, and Activity Code must not be submitted within the same run. One transaction will be accepted while the other will be rejected. (This type action may result in the wrong transaction being accepted and would be reflected on the error list.)

d) A record that matches Level, PCIN, and ECP/ECR contained on the Master File data base will be rejected as a duplicate.

e) A record that has just been inserted may not be modified within the same run update.

f) A record may be deleted and a new record inserted with the same Level, PCIN, and ECP/ECR within the same run update.

g) Inserted records will be reported on the Weekly Report of Shuttle Changes (e.g., see Appendix C, Fig. C-1(d)).

2. **Delete Transaction Types.** The following are delete transaction types:

a) A record must currently exist on the Master File data base to be deleted.

b) To encode a "DELETE" transaction, the Level, PCIN, ECP/ECR, and the Activity Code must be filled in on the Key-to-Disk Transaction Input Forms.

c) Any transaction deleted within the weekly update run will be listed on the last page of the error report (e.g., see Appendix C, Fig. C-3).

d) A record may be deleted and a new record inserted with the same Level, PCIN, and ECP/ECR within the same run update.

3. Modification Types. The following are modification types:

a) Two or more input transactions with the same Level, PCIN, ECP/ECR, and Activity Code must not be submitted within the same run. One transaction will be accepted while the other will be rejected. (This type action may result in the wrong transaction being accepted and would be reflected on the error list.)

b) A record must exist on the data base before it may be modified.

c) A "MODIFY" record will overlay the existing data with new data replacing the original.

d) Modification to a record will change the existing "BATCH DATE" to the "CURRENT BATCH DATE."

e) A modification that reflects a change in the Government Estimated Cost is shown on the Weekly Report of Shuttle Changes reflecting the increase or decrease of the transaction. The line following shows the value before and after the change.

f) An "\*" appearing on the Weekly Report of Shuttle Changes preceding the "Level" indicates the record was a modification without any change to the Government Estimated Cost. The amount printed will be zero (see copy of report, Appendix C, Fig. C-1).

## Input Preparation for Weekly Edit/Update Run

The Cost Analysis Office codes the changes occurring for the week on the "Key-to-Disk Transaction Form" (see Appendix B, Fig. B-1) in the following format.

CARD 1

<u>Columns</u>	<u>Item</u>	<u>Content</u>
1	Level	Must be 1, 2, 3, or 4.
2-6	PCIN Number	5 digits, alphanumeric.
7-15	Engineering Change Request	9 alphanumeric characters.
16	Activity Code	D = Delete I = Insert M = Modify.
17	Card Code	Must be 1.
18-28	Change Control Board Directive	11 alphanumeric characters.
29-38	Government Estimated Cost	Must contain at least one numeric character, right justified. If cost is negative, a "-" is placed in column 29.
39-44	Government Estimated Date	6 digits, numeric (MMDDYY)*.
45-54	Proposed Estimated Cost	Must contain at least one numeric character, right justified. If cost is negative, a "-" is placed in column 45.
55-60	Proposed Estimated Date	6 digits, numeric (MMDDYY)*.
61-70	Negotiated Value	Must contain at least one numeric character, right justified. If cost is negative, a "-" is placed in column 61.
71-76	Negotiated Date	6 digits, numeric (MMDDYY)*.
77-125	Not Used	

\* "MMDDYY" is a designation of MM = month, DD = day, and YY = year, i.e., 010279.



## CARD 2

<u>Columns</u>	<u>Item</u>	<u>Content</u>
1	Level	Must be the same as Card 1.
2-6	PCIN Number	Must be the same as Card 1.
7-15	Engineering Change Request	Must be the same as Card 1.
16	Activity Code	Must be the same as Card 1.
17	Card Code	Must be 2.
18-90	Nomenclature	73 free form characters.
91-125	Not Used	

Each copy of the transaction input form is delivered to the Key punch Department. Upon keypunch completion, the keytape is sent to Production Control for submittal to the edit/update program. The edit/update run is prepared per set-up instructions (for run stream see Fig. 1). Upon run completion, the output listings are returned to the programmer for distribution.

## Editing of Transaction Input Data

To improve the reliability and validity of the transaction input data before it becomes an integral part of the permanent data base, it is a policy of good automatic data processing practices to provide accuracy tests in the early flow of processing, which is commonly referred to as "EDITING." The editing procedures executed within the SCATS system are accomplished during the first phase of the execution flow. This phase includes sorting, sequencing, formatting, and validating input transactions for sequential updating of the Master File data base.

When a data error is detected in an input transaction, an image of the transaction is printed on an error listing accompanied by a message with asterisks printed under each card column which is in error. Any transaction shown on the error listing report will not affect the data base and may be resubmitted with the next update run (refer to Appendix A for a listing of transaction error messages).

## Special Request Report Parameter Card Format/ Instructions

<u>Column</u>	<u>Item</u>	<u>Content</u>
1-6	Ending Date	Numeric, formatted in year, month, day sequence (i.e., 780630 or blank)
7	Not Used	Blank
8-13	Starting Date	Numeric, formatted in year, month, day sequence or blank
14	Type Report	One character (G or space), G indicates the report is to be printed by the Government Estimated Date. A space generates a report keyed on the Batch Date.

By using the preceding card, the user may request and receive a selected or complete report of records on the data base master file. Figure 4 shows the requested report types and Figure 5 shows the placement of data cards in run deck.

## Future Enhancements

Future enhancements envision a graphics output capability allowing the plotting of the number of Level II, III, and IV changes (and total) which have been reviewed within a specified calendar period, the costs of changes reviewed within a specified calendar period, or both. This capability would provide management with trend information from which to project anticipated Change Budgeting and Change Workload and would provide data that would be helpful in predicting change traffic for future programs.

@RUN	3006AB,1HEL02D3006L,SCATSXBIN431,15,1000
@ASG,T	SCATSTP,U9S,REEL NUMBER
@XQT	MIR*ADS.ASGFILS
STANDARD	
@COPY,G	SCATSTP.,DIC.
@COPY,G	SCATSTP.,SAV.
@ASG,T	OLDMAS,F/10/POS/20
@COPY,G	SCATSTP.,OLDMAS.
@FREE	SCATSTP.
@DELETE,C	3006AB01P01
@ASG,CP	3006AB01P01,F/1/POS/10
@XQT	SAV.REPORT
**PARAMETER CARD**	
@PMD,E	
@FREE	3006AB01P01
@SYM	3006A301P01,,MHSP
@FIN	

Figure 5. SCATS special request program run stream.

APPENDIX A

ERROR MESSAGES

## LISTING OF ERROR MESSAGES AND THEIR CAUSE

<u>Error Message</u>	<u>Displayed Under the Following Conditions</u>
Level not 1, 2, 3, or 4	During the edit process when a character other than 1, 2, 3, or 4 is punched in the first position of the transaction record.
PCN/PCIN in error	During the edit process when columns 2 through 6 contain all spaces.
ECR/ECP in error	During the edit process when columns 7 through 15 contain all spaces.
CCBD-NO in error	During the edit process when columns 18 through 28 contain all spaces.
Government Estimated Cost not numeric	During the edit process when columns 29 through 38 contain all spaces. Must contain at least one numeric character.
Government Estimated Data in error	During the edit process when the month is not 01 thru 12, or the day of the month is not 01 through 31, or when the year is not greater than 77.
Proposed Estimated Cost not numeric	During the edit process when columns 45 through 54 do not contain at least one numeric character.
Proposed Estimated Data in error	During the edit process when columns 56 through 60 do not meet the same criteria as established for Government Estimated Date.
Negotiated Value not numeric	During the edit process when columns 61 through 70 do not contain at least one numeric character.
Negotiated Date in error	During the edit process when columns 71 through 76 do not meet the criteria as established for Government Estimated Date.

Error Messages

Displayed Under the Following Conditions

Card code 1 error

During the edit process when creating a new record and the incoming transaction does not contain a card code of 1 in column 17.

Card code 2 error

During the edit process when building a new record and the card code 1 has been accepted but the succeeding card does not contain a card code of 2 in column 17.

Activity code not D, I, or M

Occurs during the edit process: transaction is rejected if column 16 does not contain one of the following transaction codes (I = Insert, D = Delete, or M = Modify).

Card code not 1 or 2

During the edit process when the input transaction card code contains something other than 1 or 2 in column 17.

Card 2 missing

During the edit process when card code 1 was accepted and card code 2 was not present.

Level, PCN or ECP mismatch

During the edit process where Level, PCN or ECP of card code 2 does not match the same fields of card code 1.

Activity codes do not match

During the edit process where the activity codes in card codes 1 and 2 do not match.

Cannot insert, on master

Occurs during the update process while trying to add a record that is already established on the master.

Modify error, not on master

Occurs during the update process — a modification transaction is being processed for a record that is not established on the data base.

Error Messages

Displayed Under the Following Conditions

Ca'not delete, not on master

Occurs during the update process — trying to delete a record not established on the master data base file.

NOTE: Any transaction producing errors does not affect the data base.

APPENDIX B

WORK SHEETS



## SCATS

COMPUTER INPUT AND WORK SHEET SCATS										DATE:	PAGE NO.
										PREPARED BY:	
PCIN /PCN	ECR/ECN NUMBER	CCBD NUMBER	GOVERNMENT ESTIMATED COST	GOVT ESTM'D DATE	PROPOSED ESTIMATED COST	PROPOSED ESTIMATED DATE	NEGOTIATED VALUE	NEGOT'D DATE			
L	A	C	T	D	C	C	D	D	1		
L	C	C	T	D	C	C	D	D	2		
L	C	C	T	D	C	C	D	D	1		
L	C	C	T	D	C	C	D	D	2		
NOMENCLATURE											
L	A	C	T	D	C	C	D	D	1		
L	C	C	T	D	C	C	D	D	2		
L	C	C	T	D	C	C	D	D	1		
L	C	C	T	D	C	C	D	D	2		
NOMENCLATURE											
L	A	C	T	D	C	C	D	D	1		
L	C	C	T	D	C	C	D	D	2		
L	C	C	T	D	C	C	D	D	1		
L	C	C	T	D	C	C	D	D	2		
NOMENCLATURE											
L	A	C	T	D	C	C	D	D	1		
L	C	C	T	D	C	C	D	D	2		
L	C	C	T	D	C	C	D	D	1		
L	C	C	T	D	C	C	D	D	2		
NOMENCLATURE											
L	A	C	T	D	C	C	D	D	1		
L	C	C	T	D	C	C	D	D	2		
L	C	C	T	D	C	C	D	D	1		
L	C	C	T	D	C	C	D	D	2		

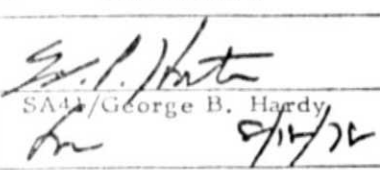
KEY-TOLSON 2510-01-434

[illegible]

1. NUMBER: <b>EC14-0802</b>	2. FCN: <b>17861</b>	<b>MSFC</b> <b>ENGINEERING CHANGE REQUEST</b> <small>(See Instructions on report)</small>	3. DATE: <b>8/1/78</b>	4. PAGE: <b>1 OF 1</b>
5. TO: <b>A41/George B. Hardy</b>		6. THRU: <b>EE11/Mr. Horton</b>		7. FROM: <b>EC14/S. F. Boyle</b>
8. LE OF CHANGE: <b>Add Series Regulator to the SRB &amp; ET Range Safety Distributors</b>				
9. RECOMMENDED PRIORITY: <input type="checkbox"/> Emergency <input type="checkbox"/> Urgent <input checked="" type="checkbox"/> Routine			10. NEED DATE:	
11. PROGRAM(S)/PROJECT(S) AFFECTED:  <b>SRB and ET Range Safety System</b>			12. END ITEM(S) AFFECTED BY NOMENCLATURE:  <b>SRB and ET</b>	
13. RECOMMENDED EFFECTIVITY:  <b>All</b>			14. BASELINE DOCUMENTATION AFFECTED (Specs, ICD, etc.):  <b>SRB R. S. Distributor 16A10310-1</b> <b>ET R. S. Distributor 16A10625-1</b> <b>and related drawings.</b>	
15. RELATED CHANGES (ECR, ECP, CR, etc.) BY NUMBER: <b>ECR#EC14 - 0615, CCBD SB3 - 00 - 2290 FCIN 17861</b>				
16. JUSTIFICATION FOR CHANGE (Include effect if not incorporated) (If necessary, continue on MSFC - Form 2327-1, continuation sheet):  <p>The shunt regulator approved on CCBD SB3-00-2290 causes checkout constraints that are undesirable. In addition the series regulator will dissipate less power.</p>				
17. EFFECTS ON: <input checked="" type="checkbox"/> Hardware <input type="checkbox"/> Facility <input type="checkbox"/> Schedule (See Enclosure _____ for impact) <input type="checkbox"/> Other (Specify) <input type="checkbox"/> Software <input checked="" type="checkbox"/> Requirements Documentation <input type="checkbox"/> Cost (Estimated cost included in Enclosure _____)				
18. DESCRIPTION OF CHANGE (Include reference to enclosures) (If necessary, continue on MSFC - Form 2327-1, continuation sheet):  <p>Add series regulators to both R. S. Distributors (one for SRB and two for ET) in lieu of shunt regulators.</p>				
19. SIGNATURE OF ORIGINATOR:  <b>S. F. Boyle</b> <i>SF Boyle</i>		DATE: <b>8-2-78</b>	TELEPHONE NUMBER: <b>453-4468</b>	OFFICE SYMBOL: <b>EC14</b>
20. CONCURRENCE				
SIGNATURE & ORGANIZATION		DATE	SIGNATURE & ORGANIZATION	
<i>Joe H. Benson</i> <b>EC14</b>		<b>8/2/78</b>		
<i>James B. Stutts</i> <b>EC14</b>		<b>8/2/78</b>		
21. TECHNICAL APPROVAL				
SIGNATURE & ORGANIZATION		DATE	SIGNATURE & ORG. NIZATION	

MSFC - Form 2327 (Rev. March 1974)

FIGURE B-2

MARSHALL SPACE FLIGHT CENTER CONFIGURATION CONTROL BOARD DIRECTIVE					
1. CCB NO. SB3-00-2421		2. CONFIGURATION CONTROL BOARD SRB LEVEL III		3. DATE 08-18-78	
4. CHANGE NO. EC14-0802				5. PAGE 1 of 2	
6. PROGRAM CONTROL NO. 7861		7. RESPONSIBLE INDIVIDUAL(S)/ORGANIZATION(S) EL42/J. A. Roach			
8. CHANGE TITLE Add Series Regulator to the SRB and ET Range Safety Distributors			9. END ITEM NUMBER AND NOMENCLATURE SRB and ET		
10. EFFECTIVITY A07 thru A18, A27, A28, A30 A37 ZA31 (ET)			11. BASELINE DOCUMENTATION AFFECTED (SPRCS, ICDS, ETC.) 16A10241 16A10625-1 ET RS Distributor 16A10302 16A10622 16A10310-1 SRB RS Distributor		
12. CHANGE DISPOSITION: <u>HARDWARE CHANGE</u> <p>1. This CCB cancels and supersedes CCB No. SB3-00-2290 and disapproves ECR No. EC14-0615.</p> <p>2. ECR EC14-0802 is approved with the following change: Add drawing numbers 16A10241, 16A10302, and 16A10622 to block 11 entitled "Baseline Documentation Affected." NOTE: All other information specified in this block shall remain as it is presently called out.</p> <p>3. EC14/S. Boyle shall release the following documentation to the MSFC Repository via EL55/C. Martin.</p> <p>a. 16A10310-Rev. E</p> <p>b. 16A10625-Rev. J</p> <p>c. 16A10302-Rev. E</p> <p>d. 16A10622-Rev. C</p> <p>Due date: September 28, 1978</p> <p>4. Upon completion of the action specified in item 3, EC14/S. Boyle shall submit an ECR to identify "related drawings" which are effected by the approval of ECR EC14-0802, but are not identified in item 3. Due date: September 29, 1978</p> <p>5. EC14/J. Lewis shall release drawing no. 16A10241-Rev. E to the MSFC Repository via EL55/C. Martin. Due date: September 28, 1978</p> <p>6. EC14/S. Boyle shall take the necessary action to ensure that documentation, as indicated above in items 3 and 5, is imposed on Bendix upon receipt from the MSFC Repository. NOTE: A copy of the RCA shall be provided to EE11/J. Robinson to close this action. Due date: October 13, 1978</p>					
13. CCB MEMBERS		CONCUR YES NO		14. CCB CHAIRMAN	
EC14/J. Stulting				 SA41/George B. Hardy 8/14/78	
EC11/T. Aden					
EP14/E. Beck					

**MARSHALL SPACE FLIGHT CENTER  
CCB DIRECTIVE - DATA AMPLIFICATION SHEET**

1. CCB NO.: SB3-00-2421	2. CCB: EC14-0802	6. PCN: 17861	5. PAGE 2 OF 2
----------------------------	----------------------	------------------	-------------------

12. CHANGE DISPOSITION - Continued (Refer to Item Number and Title Block on CCB Form):

7. SA43/J. Igou shall direct USBI to review the Range Safety Systems Documentation and incorporate as required, those requirements depicted by drawing numbers: 16A10310-Rev. E, 16A10625-Rev. J, 16A10302-Rev. E, 16A10622-Rev. O, and 16A10241-Rev. E. If the 30A90506 document requires update as a result of requirements depicted in the above drawings, USBI shall submit an ECR (no SCITTING required). A copy of Mr. Igou's contractual direction shall be provided to EE11/J. Robinson. Due date: 10-13-78

8. All future correspondence shall reference PCIN 17861

<b>1</b>	NAME OF CONTRACTOR:	<b>MARSHALL SPACE FLIGHT CENTER ENGINEERING CHANGE PROPOSAL</b>		PCN:	DATE:																								
					PAGE 1 OF																								
<b>ECP DESIGNATION</b>																													
<b>2</b>	CONTRACT END ITEM NO.:	MFG CODE:	SYS. DESIGNATION:	ECP NO.:	SUF FIX:																								
<b>3</b>	RECOMMENDED PRIORITY: <input type="checkbox"/> Emergency <input type="checkbox"/> Urgent <input type="checkbox"/> Routine																												
<b>4</b>	CONTRACT NO.:	CEI NOMENCLATURE:	<b>PART OR LOWEST ASSEMBLY AFFECTED</b>																										
			PART NO. OR TYPE DESIG.:	NAME:																									
<b>5</b>	TITLE OF CHANGE:																												
<b>6</b>	JUSTIFICATION FOR CHANGE (include consequence if not incorporated):																												
	<div style="transform: rotate(-15deg); font-weight: bold; font-size: 1.2em;">REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR</div> <div style="margin-top: 10px;"> <input type="checkbox"/> Requested      <input type="checkbox"/> Directed by Procuring  Activity per Ref: _____ </div>																												
<b>7</b>	DESCRIPTION OF CHANGE (Alternate solutions included <input type="checkbox"/> Yes <input type="checkbox"/> No):																												
<b>8</b>	CHANGE CATEGORY: _____																												
	DATE BY WHICH CONTRACTUAL AUTHORITY IS NEEDED:																												
EFFECTIVITY AND MANDATORY CHANGE PERIODS FOR INCORPORATION:																													
<b>9</b>	VEHICLE/SITE & CEI SERIAL NO.	CHANGE PERIOD	MOD. KIT DELIVERY DATE	EST. M/H FOR MOD. KIT INSTL.	OUT-OF- SERVICE TIME																								
<table style="width: 100%; border: none;"> <tr> <td style="width: 10%;">YES</td> <td style="width: 10%;">NO</td> <td style="width: 70%;"></td> <td style="width: 10%; text-align: right;">ENCL. PARA.</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>Previously issued modification instructions affected (Explain) .....</td> <td style="text-align: right;">_____</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>Proofing of modification instructions and kit installation required (Explain) .....</td> <td style="text-align: right;">_____</td> </tr> <tr> <td></td> <td></td> <td>Proofing location: _____</td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>Retest required (Identify test invalidated by change) .....</td> <td style="text-align: right;">_____</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>Requalification required (Include description of test plan for requalification) .....</td> <td style="text-align: right;">_____</td> </tr> </table>						YES	NO		ENCL. PARA.	<input type="checkbox"/>	<input type="checkbox"/>	Previously issued modification instructions affected (Explain) .....	_____	<input type="checkbox"/>	<input type="checkbox"/>	Proofing of modification instructions and kit installation required (Explain) .....	_____			Proofing location: _____		<input type="checkbox"/>	<input type="checkbox"/>	Retest required (Identify test invalidated by change) .....	_____	<input type="checkbox"/>	<input type="checkbox"/>	Requalification required (Include description of test plan for requalification) .....	_____
YES	NO		ENCL. PARA.																										
<input type="checkbox"/>	<input type="checkbox"/>	Previously issued modification instructions affected (Explain) .....	_____																										
<input type="checkbox"/>	<input type="checkbox"/>	Proofing of modification instructions and kit installation required (Explain) .....	_____																										
		Proofing location: _____																											
<input type="checkbox"/>	<input type="checkbox"/>	Retest required (Identify test invalidated by change) .....	_____																										
<input type="checkbox"/>	<input type="checkbox"/>	Requalification required (Include description of test plan for requalification) .....	_____																										

MSFC - Form 2348 (Rev. February 1974)

FIGURE B-4

PCIN	<b>SRB PROJECT CHANGE EVALUATION</b>	PAGE ____ OF ____			
CHG. NO.		OFFICE			
TITLE					
CHANGE IMPACTS: <table style="width: 100%; border: none;"> <tr> <td style="vertical-align: top; width: 33%;"> <input type="checkbox"/> SAFETY  <input type="checkbox"/> PERFORMANCE  <input type="checkbox"/> RELIABILITY  <input type="checkbox"/> MAINTAINABILITY  <input type="checkbox"/> PRODUCTIBILITY         </td> <td style="vertical-align: top; width: 33%;"> <input type="checkbox"/> GSE  <input type="checkbox"/> SPARES  <input type="checkbox"/> FACILITIES  <input type="checkbox"/> FLIGHT OPERATIONS  <input type="checkbox"/> GROUND OPERATIONS         </td> <td style="vertical-align: top; width: 33%;"> <input type="checkbox"/> SOFTWARE  <input type="checkbox"/> TEST  <input type="checkbox"/> TURNAROUND  <input type="checkbox"/> ICD'S  <input type="checkbox"/> OTHER (SPECIFY)         </td> </tr> </table>			<input type="checkbox"/> SAFETY <input type="checkbox"/> PERFORMANCE <input type="checkbox"/> RELIABILITY <input type="checkbox"/> MAINTAINABILITY <input type="checkbox"/> PRODUCTIBILITY	<input type="checkbox"/> GSE <input type="checkbox"/> SPARES <input type="checkbox"/> FACILITIES <input type="checkbox"/> FLIGHT OPERATIONS <input type="checkbox"/> GROUND OPERATIONS	<input type="checkbox"/> SOFTWARE <input type="checkbox"/> TEST <input type="checkbox"/> TURNAROUND <input type="checkbox"/> ICD'S <input type="checkbox"/> OTHER (SPECIFY)
<input type="checkbox"/> SAFETY <input type="checkbox"/> PERFORMANCE <input type="checkbox"/> RELIABILITY <input type="checkbox"/> MAINTAINABILITY <input type="checkbox"/> PRODUCTIBILITY	<input type="checkbox"/> GSE <input type="checkbox"/> SPARES <input type="checkbox"/> FACILITIES <input type="checkbox"/> FLIGHT OPERATIONS <input type="checkbox"/> GROUND OPERATIONS	<input type="checkbox"/> SOFTWARE <input type="checkbox"/> TEST <input type="checkbox"/> TURNAROUND <input type="checkbox"/> ICD'S <input type="checkbox"/> OTHER (SPECIFY)			
WEIGHT IMPACT:	SCHEDULE IMPACT:	COST PER FLIGHT IMPACT:			
DCT&E COST IMPACT:	FY	FY			
FY	FY	REMAINDER			
TOTAL					
EXISTING HARDWARE REWORK REQUIRED? YES <input type="checkbox"/> NO <input type="checkbox"/> ; IF YES, ARE DELIVERED ARTICLES AFFECTED? YES <input type="checkbox"/> NO <input type="checkbox"/> . ATTACH BRIEF DESCRIPTION OF REQUIRED REWORK UNLESS APPARENT IN CHANGE PROPOSAL.					
ACTION REQUIRED OF YOU IF CHANGE IS APPROVED:					
1. CONTRACT CHANGES (IDENTIFY): _____ _____ _____					
2. DOCUMENTATION (SPECS., DWGS., DRL/EPL'S, ETC.) CHANGES (IDENTIFY): _____ _____ _____ _____					
3. OTHER: _____ _____ _____					
RECOMMENDATION: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> NOT APPLICABLE TO THIS OFFICE   <input type="checkbox"/> ACCEPTABLE WITH CHANGES            (DESCRIBE CHANGES BELOW)         </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> ACCEPTABLE AS WRITTEN   <input type="checkbox"/> UNACCEPTABLE (STATE            REASONS BELOW)         </td> </tr> </table>			<input type="checkbox"/> NOT APPLICABLE TO THIS OFFICE  <input type="checkbox"/> ACCEPTABLE WITH CHANGES (DESCRIBE CHANGES BELOW)	<input type="checkbox"/> ACCEPTABLE AS WRITTEN  <input type="checkbox"/> UNACCEPTABLE (STATE REASONS BELOW)	
<input type="checkbox"/> NOT APPLICABLE TO THIS OFFICE  <input type="checkbox"/> ACCEPTABLE WITH CHANGES (DESCRIBE CHANGES BELOW)	<input type="checkbox"/> ACCEPTABLE AS WRITTEN  <input type="checkbox"/> UNACCEPTABLE (STATE REASONS BELOW)				
SIGNATURE _____ PHONE _____ DATE _____					

MSFC Form 516 (Rev. September 1978)

FIGURE B-5

## APPENDIX C

### REPORTS

- A. Weekly Reports
  - 1. Weekly Report of Shuttle Changes.
  - 2. Error Transactions.
- B. Special Request Reports.



EXPLANATION FOR  
WEEKLY REPORT OF SHUTTLE CHANGES\*\*

- A. DATE — This date is the Current Date and also the Batch Date within the data base record. The format for the record has been changed to YYMMDD sequence (780614).
- B. An "\*\*\*" appearing before the Level indicates the record was a modification without any change to the Government Estimated Cost. The dollar amount printed should be zero.
- C. Modifications that reflect a change in the Government Estimated Cost. The printed value reflects the INCREASE or DECREASE of the transaction. The line following shows the value before and after the change.
- D. Indicates a record that was inserted in the data base master file.
- E. Indicates a Level sub-total.
- F. Indicates a Grand Total of the "Changes" for the current update.

\*\* See attached report.

## WEEKLY REPORT OF SHUTTLE CHANGES

LEV	PCPN	ECPIECR	COOBNO	TITLE	GOVT EST COST
2	07257	7721-01	SB-06-1323	ELIMINATION OF COMMAND MASTER RESET	\$0
2	07258	7721-02	SB-06-1324	CORRECT VIBRATION CRITERIA IN TEMP PROBE ASSY SECC 1840359	\$0
2	07259	7721-03	SB-06-1325	REPAIR VIBRATION CRITERIA	\$0
2	07260	7721-04	SB-06-1326	REPAIR VIBRATION CRITERIA	\$0
2	07261	7721-05	SB-06-1327	REPAIR VIBRATION CRITERIA	\$0
2	07262	7721-06	SB-06-1328	REPAIR VIBRATION CRITERIA	\$0
2	07263	7721-07	SB-06-1329	REPAIR VIBRATION CRITERIA	\$0
2	07264	7721-08	SB-06-1330	REPAIR VIBRATION CRITERIA	\$0
2	07265	7721-09	SB-06-1331	REPAIR VIBRATION CRITERIA	\$0
2	07266	7721-10	SB-06-1332	REPAIR VIBRATION CRITERIA	\$0
2	07267	7721-11	SB-06-1333	REPAIR VIBRATION CRITERIA	\$0
2	07268	7721-12	SB-06-1334	REPAIR VIBRATION CRITERIA	\$0
2	07269	7721-13	SB-06-1335	REPAIR VIBRATION CRITERIA	\$0
2	07270	7721-14	SB-06-1336	REPAIR VIBRATION CRITERIA	\$0
2	07271	7721-15	SB-06-1337	REPAIR VIBRATION CRITERIA	\$0
2	07272	7721-16	SB-06-1338	REPAIR VIBRATION CRITERIA	\$0
2	07273	7721-17	SB-06-1339	REPAIR VIBRATION CRITERIA	\$0
2	07274	7721-18	SB-06-1340	REPAIR VIBRATION CRITERIA	\$0
2	07275	7721-19	SB-06-1341	REPAIR VIBRATION CRITERIA	\$0
2	07276	7721-20	SB-06-1342	REPAIR VIBRATION CRITERIA	\$0
2	07277	7721-21	SB-06-1343	REPAIR VIBRATION CRITERIA	\$0
2	07278	7721-22	SB-06-1344	REPAIR VIBRATION CRITERIA	\$0
2	07279	7721-23	SB-06-1345	REPAIR VIBRATION CRITERIA	\$0
2	07280	7721-24	SB-06-1346	REPAIR VIBRATION CRITERIA	\$0
2	07281	7721-25	SB-06-1347	REPAIR VIBRATION CRITERIA	\$0
2	07282	7721-26	SB-06-1348	REPAIR VIBRATION CRITERIA	\$0
2	07283	7721-27	SB-06-1349	REPAIR VIBRATION CRITERIA	\$0
2	07284	7721-28	SB-06-1350	REPAIR VIBRATION CRITERIA	\$0
2	07285	7721-29	SB-06-1351	REPAIR VIBRATION CRITERIA	\$0
2	07286	7721-30	SB-06-1352	REPAIR VIBRATION CRITERIA	\$0
2	07287	7721-31	SB-06-1353	REPAIR VIBRATION CRITERIA	\$0
2	07288	7721-32	SB-06-1354	REPAIR VIBRATION CRITERIA	\$0
2	07289	7721-33	SB-06-1355	REPAIR VIBRATION CRITERIA	\$0
2	07290	7721-34	SB-06-1356	REPAIR VIBRATION CRITERIA	\$0
2	07291	7721-35	SB-06-1357	REPAIR VIBRATION CRITERIA	\$0
2	07292	7721-36	SB-06-1358	REPAIR VIBRATION CRITERIA	\$0
2	07293	7721-37	SB-06-1359	REPAIR VIBRATION CRITERIA	\$0
2	07294	7721-38	SB-06-1360	REPAIR VIBRATION CRITERIA	\$0
2	07295	7721-39	SB-06-1361	REPAIR VIBRATION CRITERIA	\$0
2	07296	7721-40	SB-06-1362	REPAIR VIBRATION CRITERIA	\$0
2	07297	7721-41	SB-06-1363	REPAIR VIBRATION CRITERIA	\$0
2	07298	7721-42	SB-06-1364	REPAIR VIBRATION CRITERIA	\$0
2	07299	7721-43	SB-06-1365	REPAIR VIBRATION CRITERIA	\$0
2	07300	7721-44	SB-06-1366	REPAIR VIBRATION CRITERIA	\$0
2	07301	7721-45	SB-06-1367	REPAIR VIBRATION CRITERIA	\$0
2	07302	7721-46	SB-06-1368	REPAIR VIBRATION CRITERIA	\$0
2	07303	7721-47	SB-06-1369	REPAIR VIBRATION CRITERIA	\$0
2	07304	7721-48	SB-06-1370	REPAIR VIBRATION CRITERIA	\$0
2	07305	7721-49	SB-06-1371	REPAIR VIBRATION CRITERIA	\$0
2	07306	7721-50	SB-06-1372	REPAIR VIBRATION CRITERIA	\$0
2	07307	7721-51	SB-06-1373	REPAIR VIBRATION CRITERIA	\$0
2	07308	7721-52	SB-06-1374	REPAIR VIBRATION CRITERIA	\$0
2	07309	7721-53	SB-06-1375	REPAIR VIBRATION CRITERIA	\$0
2	07310	7721-54	SB-06-1376	REPAIR VIBRATION CRITERIA	\$0
2	07311	7721-55	SB-06-1377	REPAIR VIBRATION CRITERIA	\$0
2	07312	7721-56	SB-06-1378	REPAIR VIBRATION CRITERIA	\$0
2	07313	7721-57	SB-06-1379	REPAIR VIBRATION CRITERIA	\$0
2	07314	7721-58	SB-06-1380	REPAIR VIBRATION CRITERIA	\$0
2	07315	7721-59	SB-06-1381	REPAIR VIBRATION CRITERIA	\$0
2	07316	7721-60	SB-06-1382	REPAIR VIBRATION CRITERIA	\$0
2	07317	7721-61	SB-06-1383	REPAIR VIBRATION CRITERIA	\$0
2	07318	7721-62	SB-06-1384	REPAIR VIBRATION CRITERIA	\$0
2	07319	7721-63	SB-06-1385	REPAIR VIBRATION CRITERIA	\$0
2	07320	7721-64	SB-06-1386	REPAIR VIBRATION CRITERIA	\$0
2	07321	7721-65	SB-06-1387	REPAIR VIBRATION CRITERIA	\$0
2	07322	7721-66	SB-06-1388	REPAIR VIBRATION CRITERIA	\$0
2	07323	7721-67	SB-06-1389	REPAIR VIBRATION CRITERIA	\$0
2	07324	7721-68	SB-06-1390	REPAIR VIBRATION CRITERIA	\$0
2	07325	7721-69	SB-06-1391	REPAIR VIBRATION CRITERIA	\$0
2	07326	7721-70	SB-06-1392	REPAIR VIBRATION CRITERIA	\$0
2	07327	7721-71	SB-06-1393	REPAIR VIBRATION CRITERIA	\$0
2	07328	7721-72	SB-06-1394	REPAIR VIBRATION CRITERIA	\$0
2	07329	7721-73	SB-06-1395	REPAIR VIBRATION CRITERIA	\$0
2	07330	7721-74	SB-06-1396	REPAIR VIBRATION CRITERIA	\$0
2	07331	7721-75	SB-06-1397	REPAIR VIBRATION CRITERIA	\$0
2	07332	7721-76	SB-06-1398	REPAIR VIBRATION CRITERIA	\$0
2	07333	7721-77	SB-06-1399	REPAIR VIBRATION CRITERIA	\$0
2	07334	7721-78	SB-06-1400	REPAIR VIBRATION CRITERIA	\$0
2	07335	7721-79	SB-06-1401	REPAIR VIBRATION CRITERIA	\$0
2	07336	7721-80	SB-06-1402	REPAIR VIBRATION CRITERIA	\$0
2	07337	7721-81	SB-06-1403	REPAIR VIBRATION CRITERIA	\$0
2	07338	7721-82	SB-06-1404	REPAIR VIBRATION CRITERIA	\$0
2	07339	7721-83	SB-06-1405	REPAIR VIBRATION CRITERIA	\$0
2	07340	7721-84	SB-06-1406	REPAIR VIBRATION CRITERIA	\$0
2	07341	7721-85	SB-06-1407	REPAIR VIBRATION CRITERIA	\$0
2	07342	7721-86	SB-06-1408	REPAIR VIBRATION CRITERIA	\$0
2	07343	7721-87	SB-06-1409	REPAIR VIBRATION CRITERIA	\$0
2	07344	7721-88	SB-06-1410	REPAIR VIBRATION CRITERIA	\$0
2	07345	7721-89	SB-06-1411	REPAIR VIBRATION CRITERIA	\$0
2	07346	7721-90	SB-06-1412	REPAIR VIBRATION CRITERIA	\$0
2	07347	7721-91	SB-06-1413	REPAIR VIBRATION CRITERIA	\$0
2	07348	7721-92	SB-06-1414	REPAIR VIBRATION CRITERIA	\$0
2	07349	7721-93	SB-06-1415	REPAIR VIBRATION CRITERIA	\$0
2	07350	7721-94	SB-06-1416	REPAIR VIBRATION CRITERIA	\$0
2	07351	7721-95	SB-06-1417	REPAIR VIBRATION CRITERIA	\$0
2	07352	7721-96	SB-06-1418	REPAIR VIBRATION CRITERIA	\$0
2	07353	7721-97	SB-06-1419	REPAIR VIBRATION CRITERIA	\$0
2	07354	7721-98	SB-06-1420	REPAIR VIBRATION CRITERIA	\$0
2	07355	7721-99	SB-06-1421	REPAIR VIBRATION CRITERIA	\$0
2	07356	7722-00	SB-06-1422	REPAIR VIBRATION CRITERIA	\$0
2	07357	7722-01	SB-06-1423	REPAIR VIBRATION CRITERIA	\$0
2	07358	7722-02	SB-06-1424	REPAIR VIBRATION CRITERIA	\$0
2	07359	7722-03	SB-06-1425	REPAIR VIBRATION CRITERIA	\$0
2	07360	7722-04	SB-06-1426	REPAIR VIBRATION CRITERIA	\$0
2	07361	7722-05	SB-06-1427	REPAIR VIBRATION CRITERIA	\$0
2	07362	7722-06	SB-06-1428	REPAIR VIBRATION CRITERIA	\$0
2	07363	7722-07	SB-06-1429	REPAIR VIBRATION CRITERIA	\$0
2	07364	7722-08	SB-06-1430	REPAIR VIBRATION CRITERIA	\$0
2	07365	7722-09	SB-06-1431	REPAIR VIBRATION CRITERIA	\$0
2	07366	7722-10	SB-06-1432	REPAIR VIBRATION CRITERIA	\$0
2	07367	7722-11	SB-06-1433	REPAIR VIBRATION CRITERIA	\$0
2	07368	7722-12	SB-06-1434	REPAIR VIBRATION CRITERIA	\$0
2	07369	7722-13	SB-06-1435	REPAIR VIBRATION CRITERIA	\$0
2	07370	7722-14	SB-06-1436	REPAIR VIBRATION CRITERIA	\$0
2	07371	7722-15	SB-06-1437	REPAIR VIBRATION CRITERIA	\$0
2	07372	7722-16	SB-06-1438	REPAIR VIBRATION CRITERIA	\$0
2	07373	7722-17	SB-06-1439	REPAIR VIBRATION CRITERIA	\$0
2	07374	7722-18	SB-06-1440	REPAIR VIBRATION CRITERIA	\$0
2	07375	7722-19	SB-06-1441	REPAIR VIBRATION CRITERIA	\$0
2	07376	7722-20	SB-06-1442	REPAIR VIBRATION CRITERIA	\$0
2	07377	7722-21	SB-06-1443	REPAIR VIBRATION CRITERIA	\$0
2	07378	7722-22	SB-06-1444	REPAIR VIBRATION CRITERIA	\$0
2	07379	7722-23	SB-06-1445	REPAIR VIBRATION CRITERIA	\$0
2	07380	7722-24	SB-06-1446	REPAIR VIBRATION CRITERIA	\$0
2	07381	7722-25	SB-06-1447	REPAIR VIBRATION CRITERIA	\$0
2	07382	7722-26	SB-06-1448	REPAIR VIBRATION CRITERIA	\$0
2	07383	7722-27	SB-06-1449	REPAIR VIBRATION CRITERIA	\$0
2	07384	7722-28	SB-06-1450	REPAIR VIBRATION CRITERIA	\$0
2	07385	7722-29	SB-06-1451	REPAIR VIBRATION CRITERIA	\$0
2	07386	7722-30	SB-06-1452	REPAIR VIBRATION CRITERIA	\$0
2	07387	7722-31	SB-06-1453	REPAIR VIBRATION CRITERIA	\$0
2	07388	7722-32	SB-06-1454	REPAIR VIBRATION CRITERIA	\$0
2	07389	7722-33	SB-06-1455	REPAIR VIBRATION CRITERIA	\$0
2	07390	7722-34	SB-06-1456	REPAIR VIBRATION CRITERIA	\$0
2	07391	7722-35	SB-06-1457	REPAIR VIBRATION CRITERIA	\$0
2	07392	7722-36	SB-06-1458	REPAIR VIBRATION CRITERIA	\$0
2	07393	7722-37	SB-06-1459	REPAIR VIBRATION CRITERIA	\$0
2	07394	7722-38	SB-06-1460	REPAIR VIBRATION CRITERIA	\$0
2	07395	7722-39	SB-06-1461	REPAIR VIBRATION CRITERIA	\$0
2	07396	7722-40	SB-06-1462	REPAIR VIBRATION CRITERIA	\$0
2	07397	7722-41	SB-06-1463	REPAIR VIBRATION CRITERIA	\$0
2	07398	7722-42	SB-06-1464	REPAIR VIBRATION CRITERIA	\$0
2	07399	7722-43	SB-06-1465	REPAIR VIBRATION CRITERIA	\$0
2	07400	7722-44	SB-06-1466	REPAIR VIBRATION CRITERIA	\$0
2	07401	7722-45	SB-06-1467	REPAIR VIBRATION CRITERIA	\$0
2	07402	7722-46	SB-06-1468	REPAIR VIBRATION CRITERIA	\$0
2	07403	7722-47	SB-06-1469	REPAIR VIBRATION CRITERIA	\$0
2	07404	7722-48	SB-06-1470	REPAIR VIBRATION CRITERIA	\$0
2	07405	7722-49	SB-06-1471	REPAIR VIBRATION CRITERIA	\$0
2	07406	7722-50	SB-06-1472	REPAIR VIBRATION CRITERIA	\$0
2	07407	7722-51	SB-06-1473	REPAIR VIBRATION CRITERIA	\$0
2	07408	7722-52	SB-06-1474	REPAIR VIBRATION CRITERIA	\$0
2	07409	7722-53	SB-06-1475	REPAIR VIBRATION CRITERIA	\$0
2	07410	7722-54	SB-06-1476	REPAIR VIBRATION CRITERIA	\$0
2	07411	7722-55	SB-06-1477	REPAIR VIBRATION CRITERIA	\$0
2	07412	7722-56	SB-06-1478	REPAIR VIBRATION CRITERIA	\$0
2	07413	7722-57	SB-06-1479	REPAIR VIBRATION CRITERIA	\$0
2	07414	7722-58	SB-06-1480	REPAIR VIBRATION CRITERIA	\$0
2	07415	7722-59	SB-06-1481	REPAIR VIBRATION CRITERIA	\$0
2	07416	7722-60	SB-06-1482	REPAIR VIBRATION CRITERIA	\$0
2	07417	7722-61	SB-06-1483	REPAIR VIBRATION CRITERIA	\$0
2	07418	7722-62	SB-06-1484	REPAIR VIBRATION CRITERIA	\$0
2	07419	7722-63	SB-06-1485	REPAIR VIBRATION CRITERIA	\$0
2	07420	7722-64	SB-06-1486	REPAIR VIBRATION CRITERIA	\$0
2	07421	7722-65	SB-06-1487	REPAIR VIBRATION CRITERIA	\$0
2	07422	7722-66	SB-06-1488	REPAIR VIBRATION CRITERIA	\$0
2	07423	7722-67	SB-06-1489	REPAIR VIBRATION CRITERIA	\$0
2	07424	7722-68	SB-06-1490	REPAIR VIBRATION CRITERIA	\$0
2	07425	7722-69	SB-06-1491	REPAIR VIBRATION CRITERIA	\$0
2	07426	7722-70	SB-06-1492	REPAIR VIBRATION CRITERIA	\$0
2	07427	7722-71	SB-06-1493	REPAIR VIBRATION CRITERIA	\$0
2	07428	7722-72	SB-06-1494	REPAIR VIBRATION CRITERIA	\$0
2	07429	7722-73	SB-06-1495	REPAIR VIBRATION CRITERIA	\$0
2	07430	7722-74	SB-06-1496	REPAIR VIBRATION CRITERIA	\$0
2	07431	7722-75	SB-06-1497	REPAIR VIBRATION CRITERIA	\$0
2	07432	7722-76	SB-06-1498	REPAIR VIBRATION CRITERIA	\$0
2	07433	7722-77	SB-06-1499	REPAIR VIBRATION CRITERIA	\$0
2	07434	7722-78	SB-06-1500	REPAIR VIBRATION CRITERIA	\$0
2	07435	7722-79	SB-06-1501	REPAIR VIBRATION CRITERIA	\$0
2	07436	7722-80	SB-06-1502	REPAIR VIBRATION CRITERIA	\$0
2	07437	7722-81	SB-06-1503	REPAIR VIBRATION CRITERIA	\$0
2	07438	7722-82	SB-06-1504	REPAIR VIBRATION CRITERIA	\$0
2	07439	7722-83	SB-06-1505	REPAIR VIBRATION CRITERIA	\$0
2	07440	7722-84	SB-06-1506	REPAIR VIBRATION CRITERIA	\$0
2	07441	7722-85	SB-06-1507	REPAIR VIBRATION CRITERIA	\$0
2	07442	7722-86	SB-06-1508	REPAIR VIBRATION CRITERIA	\$0
2	07443	7722-87	SB-06-1509	REPAIR VIBRATION CRITERIA	\$0
2	07444	7722-88	SB-06-1510	REPAIR VIBRATION CRITERIA	\$0
2	07445	7722-89	SB-06-1511	REPAIR VIBRATION CRITERIA	\$0
2	07446	7722-90	SB		

FIGURE C-2





FIGURE C-4

## APPENDIX D

### RECORD FORMATS

- A. Master File Record Format.
- B. Weekly Transaction Record Format.
- C. Special Report Request — Parameter card format.

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

172 CHARACTERS  
(32 words)  
Block 100

S R B COST ACCOUNTING TRACKING SYSTEM  
RECORD LAYOUT FOR DATA 1

# CARD AND / OF TAPE LAYOUTS

2 56

PCIN/ TON	ECR/ECT NO.	CCSD-NO.	GOVT EST COST DATE	PROPOSED EST. COST	PROP EST DATE	NEGO VAL DATE	BATCH DAT
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

NOT IN USE
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

ACTIV
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
--

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
--

REF - Form 100 (February 1974)

FIGURE D-1

S R B COST ACCOUNTING TRACKING SYSTEM  
KEY TAPE LAYOUT FOR INPUT TRANSACTIONS

[illegible]

CARD 1

NOT USED									
----------	--	--	--	--	--	--	--	--	--

CARBON

[illegible][illegible]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

MSFC - Form 490 (Rev. 10-78)

FIGURE D-2



## 80 CHARACTERS

ENDING	T
DATE	S T A R T I N G Y P E D
	D A T E

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80																				

---

---

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

---

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

---

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

## APPROVAL

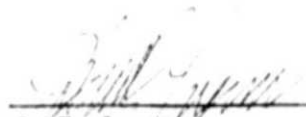
### SCATS - SRB COST ACCOUNTING AND TRACKING SYSTEM HANDBOOK

By Ross B. Zorn, Rodney D. Stewart, Gary Coley,  
and Marie Higginbotham

The information in this report has been reviewed for technical content. Review of any information concerning Department of Defense or nuclear energy activities or programs has been made by the MSFC Security Classification Officer. This report in its entirety, has been determined to be unclassified.



H. E. THOMASON  
Director, Systems Analysis and  
Integration Laboratory



J. C. LYNN  
Director, Computer Services Office